

## Instruction Manual

# HI 3898 Chloride

## Rapid Screening Test for COD - ISO and EPA



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Dear Customer,

Thank you for choosing a Hanna Product. Please read the instructions carefully before using the chemical test kit. It will provide you with the necessary information for correct use of the kit.

Remove the chemical test kit from the packing material and examine it carefully to make sure that no damage has occurred during shipping. If there is any noticeable damage, notify your Dealer or the nearest Hanna office immediately.

Each kit is supplied with:

- HI 3898-0 Reagent, 4 bottles (25 mL each);
- Chloride Indicator, 1 dropper bottle (7 mL);
- 1 glass cuvet with plastic stopper;
- 2 calibrated syringes of 1.0 mL with tip.

**Note:** Any damaged or defective item must be returned in its original packing materials.

## Specifications

Range	1000 ppm Cl <sup>-</sup> (ISO) 2000 ppm Cl <sup>-</sup> (EPA)
Analysis Method	screening test
Sample Size	2 mL
Number of Tests	100
Case Dimensions	120 x 110 x 90 mm
Shipping Weight	200 g

ISTR3898R2 12/03

## Significance and Use

This screening test is a rapid test to detect high chloride levels in water and wastewater, that might cause interference with official COD methods. The test is in accordance with the *ISO 15705:2002 method*, and indicates within seconds a YES / NO possibility of having chloride interference on COD measurements.

The kit can be used for checking 1000 ppm chloride concentration for the ISO COD testing, or for a 2000 ppm chloride check for the USEPA, APHA, AWWA and WEF methods.

If high chloride levels are detected, the sample for COD measurements needs to be diluted before digestion.

USEPA : US Environmental Protection Agency

APHA : American Public Health Association

AWWA : American Water Works Association

WEF : Water Environment Federation

ISO : International Organization for Standardization

ppm : is equivalent to mg/L

## Chemical Reaction

On addition of the indicator to the sample the solution turns yellow. Then the HI 3898-0 reagent is added and a white precipitate is formed if chlorides are present. If the chloride concentration is lower than 1000 ppm for ISO, or 2000 ppm for EPA, a orange-brown complex is formed. If the solution remains yellow, high chloride concentrations are present. See also table 1.

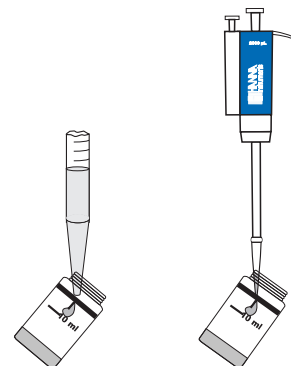
Table 1

ORANGE - BROWN	Chloride concentration	YELLOW
NO DILUTION REQUIRED	ISO < 1000 ppm <	DILUTE SAMPLE
	EPA < 2000 ppm <	

## Instructions

READ ALL INSTRUCTIONS BEFORE USING THE TEST KIT

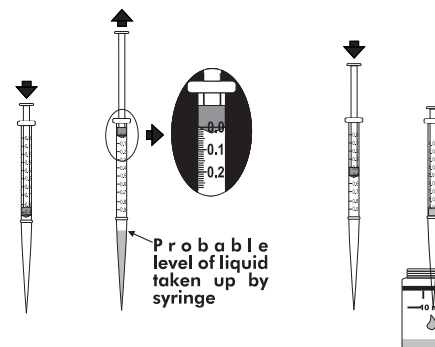
- Add exactly 2.0 mL of sample to the glass cuvet, using a Class A pipet or the Hanna HI 731342 2000 µL automatic pipette.



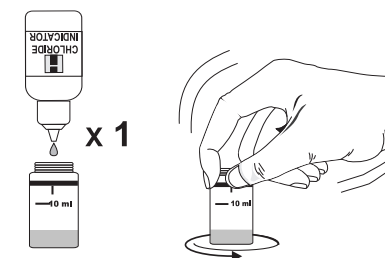
Alternatively, use the 1.0 mL graduated syringe with tip, to add 2.0 mL of sample to the glass cuvet.

**Note:** to dose exactly 2.0 mL of sample to the cuvet, follow step (a) to step (e) twice:

- push the plunger completely into the syringe,
- insert tip into sample,
- pull the plunger out until the lower edge of the plunger seal is on the 0 mL mark of the syringe,
- take out the syringe and clean the outside of the syringe tip. Be sure that no drops are hanging on the tip of the syringe, if so eliminate them.
- Then, keeping the syringe in vertical position above the cuvet, push the plunger completely down into the syringe. Now the exact amount of 1.0 mL has been added to the cuvet.



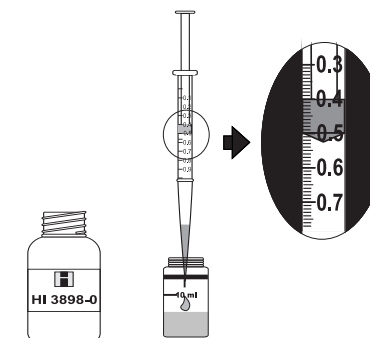
- Add 1 drop of Chloride Indicator reagent and swirl the cuvet to mix. The solution will turn yellow.



- At this point, it is possible to determine the chloride concentration for COD measurement according to ISO or EPA.

## SCREENING TEST PROCEDURE for COD - ISO

- Using the other clean 1.0 mL syringe with tip, add exactly 0.5 mL of HI 3898-0 reagent to the cuvet.



- Cap the cuvet with the plastic stopper and shake vigorously to mix.

